FINDERS KEEPER

By way of disclosure: Although we have no financial interest in the success of the product described below or of its vendor, we have helped out with some free advice. And we certainly confess to emotional bias in its favor. But we didn't start out that way when Paul Kleinberger showed up with his bedroll and his Compaq to give us a demo one Saturday morning last winter...

"Text data bases." That notion is gaining some currency, spurred by the availability of textual data from on-line services and on CD ROM. A number of vendors have tried their hands at personal organizers and the like, and the volume of correspondence, archival E-mail and other detritus filling corporate electronic files is forcing a search for some way to get at all this stuff. Full-text search, electronic indexing, and various pattern-matching and intelligent search techniques are evolving rapidly, driven by these needs. But text search allows you only to find what you're looking for. Synonyms, Boolean expressions, proximity constraints, wild cards, fuzzy matches and even cluster analysis (see a future issue) merely broaden or tighten the search. They simply enhance the standard procedure: Define, retrieve and (usually) select the desired items from an abundance of less relevant items that also match.

A few diligent souls such as Gary Kildall of KnowledgeSet and Ted Nelson of Xanadu and Owl/Guide are working on rich ways to structure text with hypertext, but for the moment this is still a painstaking, unautomated process. Hytertext, tables of contents, cross-references, and outlines all require the application of human intelligence.

Until now...

TNET, a working name for ThoughtNET, overcomes that barrier. An alpha-stage product with no formal name yet, it is scheduled to be sneak-previewed at Comdex and released next fall by Persoft of Madison, WI. TNET extends the traditional word-search methodology to organize text items in a useful, structured way. You might not use it to organize paragraphs in a term paper (or a newsletter), but it can arrange a collection of discrete yet related items -- letters, resumes, article abstracts, memos, etc., by whatever cri-

THE TRANSCRIPTS ARE IN ALPHA!
teria are most relevant. And then, rather than list the items in order of the number of word matches, TNET displays an outline or hierarchical table of contents of your text base. You can let TNET determine a natural structure, or you can suggest an outline for it to follow. It can both order and aggregate. Feed it data, unstructured, and it will return it, structured.

From chaos into order

Forget how it works; the difficult thing to understand is that it does the work. It's difficult to demo, because if it uses pre-entered text the viewer assumes the demo-giver has prestructured it; if the user enters the text on the spot, there's not enough there for the product to impress. But for those who are willing to sit still and understand what's going on, the revelation is compelling. As the Wang ad says, "No wires."

How does it work? Start with the data. It consists of discrete blocks of text -- the letters, phone messages, resumes noted above, anything you might have on your computer that's not in a data base or spreadsheet or other pre-structured form. These blocks of text, or items, are identified and classified (not necessarily uniquely) by their key words. The key words can be identified as they are entered by the user; an item can be tagged with key words that don't appear in the text (you might not want to use the word "rejection" in a rejection letter, for example); or existing data can be scanned and indexed by specified key words. Those key words can be specified as a list, or as an outline by which the items should be structured.

Thus the system now has a text base, or a group of items; and an index, which consists of pointers to the items (indicated by numbers in the sample personnel text base below) plus the key words in each. This step in the procedure does not appear on the screen. A regular text-search program would now alphabetize all the key words and enable you to find, say, item number 11 by specifying "Juan" and "ComputerComfort." You would also get item 4 as well as item 11 by specifying only "ComputerComfort." (Like a demo, this explanation shows the workings but not the power of TNET.)

1 Alice bonus
2 Juan quota
3 request Juan sabbatical
4 Alice ComputerComfort
5 problem Juan training
6 Fred Magic Machines

7 quota Fred request
8 Juan Alice
9 training promotion Juan
10 transfer Alice request
11 Juan quota ComputerComfort

The distinction: It can recognize topics but not the flow of an argument: For example, it could classify a text as about copyright issues, but it could not determine whether it supported a particular point of view. Eventually natural-language understanding will support the building of abstracts or text summaries, but that's a long way off. Remember those reading tests that asked you to summarize a passage: Is this about (A) fishing, (B) summertime in Portland, or (C) Jack's relationship with his father? Not even all humans know for sure.

...although this could of course be imported in. The problem with TNET and most text bases, let alone other applications, is that they operate in closed worlds. However easy it is to import data -- and it's easy with TNET because the receiving format is unstructured -- it's not the same as being able to let your tool roam freely. A short-term goal is to read wp files as is.

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By contrast, TNET finds the most frequently used key word, and divides the list of items into two parts -- those that contain that key word, and those that don’t. This process is generally repeated sufficiently to fill a couple of screens, and then repeated as the user calls for more, either deeper into the current category ("Juan" in the example below) or downwards towards the next category ("Alice"). Ultimately, the process can be repeated until all the key words have been exhausted. Thus, the items have been automatically classified by the largest groups first, down to successively finer groups. The normal (for TNET), fully expanded structure would be:

I. Juan (6)
   A. quota (2)
      1) ComputerComfort
   B. training (2)
      1) promotion
      2) problem
   C. Alice
   D. sabbatical request
II. Alice (3)
   A. ComputerComfort
   B. transfer request
   C. bonus
III. Fred (2)
   A. quota request
   B. Magic Machines

When you have a general idea of what you wish to look at, you can continue to branch down or across through the table of contents (a "specific" expansion); that is, you can see a branch or subset of the entire table of contents hierarchy. Or you could select a particular key word and see the table of contents for all items that contain that key word, restructuring the original table of contents. For example, by selecting "Alice" for a "general" expansion, you would see item 8, listed under Juan in the original scheme of things, listed under Alice.

expansion of Alice
   I. ComputerComfort
   II. transfer request
   III. bonus
   IV. Juan

Another user might find this structure useful, or he might not. The sales manager might prefer to see the notes organized by account name, starting with ComputerComfort, a big customer for the line of add-in coffee machine controller boards that Juan, Alice and Fred are trying to sell. He could specify an outline with the categories ComputerComfort, Magic Machines, and so forth. He could also elect to filter out all the key words that are of no interest to him in this context, such as training, transfer, and sabbatical. His version would look like this:

I. ComputerComfort
   A. Juan
   B. Alice
II. Magic Machines
   A. Fred

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And so forth. Note that irrelevant items thrown into a text base automatically get segmented out, and can easily be carved off and put into a separate text base. The structure is both visible and malleable.

Aside from its built-in structuring mechanisms, TNET also lets the user build in hypertext features, cross-references from within one item to another, such as from an article about TNET to one about intellectual property, with which it might have few words in common. (Footnotes are a pale, paper form of hypertext.)

Like any program that doesn’t presume to take over the world, TNET can work in terminate-and-stay-resident mode, callable from other programs and able to read in marked data selections from the screen as well as entire files.

Sorting the needles in the haystack

The beauty of TNET is that it does the work. Automatic indexing is easy; automatic structuring based on such an index, to our knowledge, isn’t commercially available. It can be scaled up; indeed, its value increases on large-scale text bases (although performance may be an issue). While the initial version of TNET is a personal tool, Persoft will eventually offer a multi-user version, with network support, version management and consolidation facilities, that will manage corporate or workgroup text bases on a server. In fact, TNET should blossom as a multi-user tool given its ability to make a large data base as manageable as a small one, and to condense a server-size amount of data into a couple of screenfuls for easy manipulation, searching, and navigation. Each person -- personnel manager or sales manager -- can look at the same data from his individual perspective.

Unlike typical text search programs, where you can get exactly what you ask for whether or not you ask for the right thing, TNET helps you explore what you could want -- not in the usual way of providing a list of key words, a ranking of items by number of matches with a list or cluster of key words, but in a meaningful way, so you can easily see what you have to choose from.

Empty -- or open?

For better or worse, TNET is not a data base. It has no inherent knowledge of data structures, dates, etc. It can't handle schedules in any automatic way, nor does it understand the notion of fields, although the underlying technology is not incompatible with such an extension. Indeed, we can imagine a richer product with much more built-in structure, but it might have too much "personality" -- consider the way some people react to The Coordinator (Release 1.0, 24 September 1986), which imposes a structure on its users. Kleinberger hopes to add a small-scale forms capability this summer (there's a difference between the program we've seen and the product that will be released), but at the moment TNET has no content.

In the purest way, TNET is a tool, not an application. Its richness will come from what users do with it. An analogy: Consider Lotus 1-2-3, perhaps the most widely used tool around. It enables a user to build models without much attention to the ultimate structure that will be built. Traditional modeling languages on mainframes, pfs:Professional Plan and especially Javelin (more application than tool) allow users to build models with the structure first -- a powerful notion, but it requires the user to plan ahead.

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Finally, we have spreadsheet auditors and HAL, tools that inspect a spreadsheet and \textit{ex post facto} derive the underlying structure, such as it is.

In the text world, the analogy to 1-2-3 is the word-processor, which lets you do anything, but doesn’t give you much structure. The role of the modeler is taken by outline processors or data-entry forms, which enable you to build structured text -- if that’s what you set out to do.\textsuperscript{3} The role of the auditor, the retroactive structuring tool, is held by TNET.

1-2-3’s success of 1-2-3 is due to the power it gives to users. By itself, it doesn’t do much, but it lets users do anything from forecasting to tax returns to address lists to word-processing. Some of these tasks it’s not suited for, but users prefer manipulating 1-2-3 to learning a new tool. Symbiosis develops: The tool feels like an extension of the user’s mind. People take the path they know rather than try a new, uncertain shortcut.

\textbf{Whence it came}

TNET was developed in Jerusalem by inventor Paul Kleinberger and Natan Blanks. Kleinberger was working on an AI project and found it impossible to keep track of all his notes -- until he came up with the idea of TNET, and turned to Natan Blanks, then a local student, for help with the implementation. U.S.-born and educated partially at Yale, Kleinberger came back to the U.S. a couple of years ago in search of a distribution arrangement, and agreed to do the project for Brøderbund. Unfortunately that deal ultimately fell apart, despite continued respect and good will on both sides.

After showing the product to a host of potential publishers\textsuperscript{4} Kleinberger settled on his very first contact, his cousin Ed Harris, president of Persoft. Kleinberger gets unspecified royalties; the folks from Persoft get full rights. Persoft -- which generated profitable revenues of $3.4 million last year from its well-regarded if nonglitzy products SmartTerm and Referee -- is raising $3 million in additional funds to support TNET and has signed on BBDO Chicago for the ads and Softsel for exclusive initial distribution.

Kleinberger, 43, lives with his family in Jerusalem; we can imagine the pitch: "Software designed by a man, not a committee!" "An idea so wonderful market research could never have imagined it!" He is the marketer’s perfect garage developer, an earnest, modest man who cares passionately about his software, traveled the country last winter on a Northwest Airlines 30-day pass (forget the jokes!) and hand luggage, and wants money only to support his family (a wife and three children). Like Robert Carr, Jonathan Sachs, Bill Gross and other mostly retiring designers, Kleinberger forgets himself when he demonstrates his software; he glows and captivates.

\textbf{Marketing matters}

TNET is a marketing challenge. People who know enough to grasp what it does know that no one else has done it, and will wonder why. People who don’t,

\textsuperscript{3}As UPS advised to counter Federal Express: "You want it there tomorrow? Send it yesterday!" -- at the cheap UPS two-day rate.

\textsuperscript{4}On the intellectual property issue, one of the venture capitalists involved passed on the deal because he was dubious of the protectability of the idea.
probably aren't interested in a computer in the first place. It's not a data base; it's not a traditional text indexing and retrieval system; it's not a free-form data base. By all accounts the closest thing around is Lotus's rumored agenda manager. These two products may well support each other in the marketplace, and grow together for a long time before one grows at the other's expense.

The notion of a text base is still too vague to be appealing, and its uses unclear. The first demo we saw used recipes -- just what's needed to position the product as a toy. More likely TNET will go out with several useful sample text bases, among them a set of business form letters (about missed appointments, job applications, site visits, delayed shipments, checks in the mail and the like). Others we can think of include a resume file, perhaps with profiles of Persoft employees and industry luminaries (who always love attention); a set of messages ordered by date that tells a poignant story (key words: missed, cancelled, reject, unforgivable, never, forever); a file of synopses of articles about, say, Gary Hart.

The trick will be for TNET to find a natural market quickly enough to establish critical mass. Although it does more than a data base (which simply regurgitates data stored in a structure the user gave it), it also does less. Persoft doesn't want to scare off product explorers with a high price the way Javelin did with its $695 release price (Release 1.0, 31 October 1986), and is looking at a range of $200 to $500. At an "introductory" price around $200, we think the product should attract a good base of adherents, and the price can be adjusted later according to marketplace reaction. Any revenues forgone in the first six months won't matter much in the long run anyway, and a low price (but not so low as to imply poor quality) will give TNET the best shot at finding its market. That market is now informed enough to believe a pitch that says: "Look, we think this is a great product, but we're going to give it away because it's so tough to get noticed these days..." The sneak preview at Comdex should drum up word-of-mouth support among luminaries and seed some press coverage.

The preview might also offer a name-the-product contest if Persoft can't fix on one by then. Suggested names include Finders Keepers, our and many people's favorite, but already taken; Fingertip, our next favorite, also taken; Inline, as opposed to outline; and combinations of the word "view," such as Clearview and Overview. Persoft worried that "Fingertip" might not support the future positioning of the product as a multi-user business product; we figure it promises that even a monster corporate data base can be at your fingertips with the use of this tool. Besides, to take one example, it wasn't Apple's name that kept it out of corporations for so many years; it was attitude and product.

Who's the user?

Theoretically, anyone who needs to get organized could use TNET -- anyone who leads an interesting enough (business) life to use a pc for more than just spreadsheets or running a specific application. In other words, if your pc is really just a terminal to an accounting application, forget it! But if you ever write notes for an editorial meeting, take messages, make yourself to-do ticklers, or shuffle random paper, TNET could be valuable.
In fact, TNET has a significant advantage (besides potential market size, which will be offset by potential competition) over other equally novel and powerful products (the vastly enhanced TKSOLVERPLUS from United Technical Services, for example). Just as portable computers and word-processors get disproportionate attention from the press because reporters and editors can use (or want) these products for themselves, so will TNET likely appeal to the press corps. It's also likely to attract people with a lot of information stored on their computers, who tend to be heavy computer users, and in turn tend to be opinion leaders in their own user circles.

Issues of protection

How special is TNET's technology? Kleinberger has applied for patents on the underlying algorithms, which may or may not be granted. While it shouldn't be that difficult for anyone to reverse-engineer an adequate implementation of the product, Persoft/Kleinberger probably have reasonable grounds for their implicit claim that the technology is new and non-obvious. But for a number of reasons -- to co-opt would-be knock-off artists, to make some money, and to foster the technology -- the company will license it broadly, especially to information vendors. The concept is too widely applicable to remain in one company's hands for long.

Does it make sense for Persoft to show off TNET so early? We're not sure, but Kleinberger visited enough people in his search for funding and distribution last winter that the secret is already filtering out. The summer months may give Persoft time to acquaint the word-of-mouth market with the product in its own way, and start to establish TNET as the category standard, with or without patent protection.

The initial danger is probably more that people will ignore TNET than that they will copy it. Moreover, a small company starting to build a similar product now would face all the difficulties Persoft will face, plus the added handicaps of existing competition and lack of market presence (Persoft's products regularly make the Softsel HotList). A larger company -- one of the gorillas, say -- probably has too much on its plate already to be able or humble enough to take on such an unproven product, either internally or by acquisition of a knock-off. Wait until it's successful, and then we can talk, is the general attitude.

Conclusion

Will TNET make it? It's a rough tough market out there, and a lot of good ideas have foundered. Or the idea may live, but in someone else's more successful product. TNET now has the advantage of no direct competition, and the disadvantage of no clear market. Products such as askSam; the new, improved DayFlo; Conductor's ACT! and forthcoming agenda managers may reverse that situation -- providing some competition and creating a market -- but they will also require Persoft to do a spectacular job of defining and differentiating its product.

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From a recent New York Times book review by Christopher Lehmann-Haupt:
"...More annoying still is the book's disjointed narrative flow, which proceeds by the vaguest association of subject matter, as if arranged by some computer program unable to distinguish between the words in a given paragraph and the actual message conveyed by those words." Touche!

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IBM PLAYS ITS CHINA CARD, PICKS LOTUS

The day after the announcement of a development and marketing agreement between Lotus and IBM, an ad proclaiming the relationship appeared in The Wall Street Journal. Unlike most such ads, it identified no sponsor and could have come from both (or either of the) companies. In fact, Lotus prepared, placed and paid for the ad, although it was approved by IBM.

While Lotus may have relatively more to gain from this deal, IBM stands to benefit also. To the extent that end-users buy applications, not systems software, the value of the Lotus alliance may be even greater for IBM than that of its alliance with Microsoft. (The importance of the Microsoft alliance is that developers write for operating systems. Developers, one, believe in Microsoft's ability to build an OS, and two, assume that Microsoft's product will be "safer" to rely on and more widely available than one sold only by IBM.)

Tight ties

Despite continual speculation that the IBM/Microsoft alliance is crumbling (which this latest move will only erroneously fuel), the IBM/Microsoft relationship is tight--so tight, in fact, that IBM is probably glad to offset it by going elsewhere for some much-needed applications technology and presence. Moreover, aside from issues of software geopolitics, Lotus is the appropriate choice. Of all the pc software companies, Lotus is closest to IBM in spirit and style (for better or worse). Of all the major pc software companies, it has the best understanding--technical and sociological--of the mainframe environment, and was building up SQL (Structured Query Language) expertise, including a reported deal with Gupta Technologies, before most pc types had even heard of the language.

In essence, the agreement specifies that Lotus and IBM will together build and market a mainframe version of 1-2-3, 1-2-3/M, which IBM alone will sell to customers. 1-2-3/M will support IBM's Systems Application Architecture, as will Lotus's OS/2-based 1-2-3/G (which will run under the Presentation Manager, another SAA component).

Taking their places

This new wrinkle obviously removes some luster from Microsoft's forthcoming PC version of Excel, which we assume will also support SAA. (It will be interesting to see the variety of products that can co-exist under SAA, just as they do in the Macintosh environment.) Lotus's stronghold will now be tougher to breach than Microsoft might have anticipated. While Microsoft will position Excel on the pc as the spreadsheet analogue of desktop publishing in a world of word-processors, Lotus can now convincingly tout connectivity.

As deftly displayed in a chart drawn with Lotus's Freelance Plus, Lotus won't wait for the Presentation Manager to upgrade 1-2-3 into a protected-mode, C-based, multi-tasking version (release 3) under OS/2, while 1-2-3/G will be a more substantial rewrite with graphics and Lotus/DBMS will exist only in the graphics-rich OS/2-with-PM version. We doubt that Lotus is unique in its desire to get the operational benefits of OS/2 without waiting for the graphics part.

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At the data base end, Ashton-Tate does look vulnerable -- and in an increasingly crowded market.\(^5\) Aside from IBM's own entry, bundled in with the proprietary Extended Version of OS/2,\(^6\) we will see data base offerings from Microsoft (possibly in conjunction with Sybase, Release 1.0, 1 July 1986), Lotus and Oracle. These will all be compatible with what IBM does, which will be compatible with its own mainframe DB2 and use SQL. Each vendor, however, will compete in performance (speed, capacity, integrity protection, etc.) of the underlying data base engine, and will offer a variety of accompanying access methods and application development tools, which should be able to work with IBM's engine as well as with each vendor's own. Each vendor will presumably treat IBM's offering as a subset.

How much will IBM rely on Lotus's DBMS for its extensions to its OS/db2? That probably depends on a lot of things, including how good a job Lotus does. IBM's commitment to 1-2-3/M is clear and firm; its involvement in Lotus/DBMS is somewhat vague.

The corporate productivity tool?

As for 1-2-3/M itself, our initial reaction is, Why run 1-2-3 on a mainframe? For one, there are still people out there with mainframes and terminals, but without pcs. Two, the product will be used mostly for consolidations, huge company-wide models and the like, rather than for individual "productivity" applications. It will have tight links to DB2, so that a single cell or range can contain DB2 calls that bring in the appropriate realtime data from an active data base. Most current products that fill such a need go through several layers to provide that capability: from spreadsheet to translation facility to micro-mainframe link to data base -- and back again.

Naturally, in the brave new world where everyone adheres to IBM's Systems Application Architecture (and 1-2-3/M is one of the first specifically announced applications to do so), 1-2-3/M will be able to work cooperatively not just with IBM's DB2 and Lotus's own Lotus/DBMS, but with all other adherent data bases. While spreadsheet data structures don't seem to be a significant part of SAA, they will definitely form part of the Lotus System, so that data in Lotus products will have an easy route back and forth into the mainframe world through one or other of those data representations -- spreadsheet or relational tables.

\(^5\)Without much recognition, Ashton-Tate has produced its first new "surface" for the dBASE family. Although it is positioned, and will primarily be used, as a word-processor, MultiMate Advantage II can manipulate (not just import) dBASE files directly. That is, it front-ends a dBASE data base. And that's what a "surface" does, although the data-manipulation flexibility of this particular surface is somewhat limited.

\(^6\)IBM's bundling of the dbms with its OS/2 Extended Version is arousing the ire of a number of competing vendors, notably Applied Data Research, vendor of Datacom and associated tools. Given current market practice, ADR's Marty Goetz has a point. Although we believe that a data base structure (without the associated tools and "surfaces") ultimately should be an integral part of the operating system/environment, the current state of the art is far from perfect, and a little healthy competition might help to advance it.
That has interesting implications: 1-2-3/M will support both IBM's SAA and Lotus's own Lotus System, an equivalent combination of protocols, specifications and design rules. While that doesn't mean that Lotus will necessarily follow SAA to the letter in everything it does, it does mean that SAA will have an influence on all Lotus's products through the Lotus System. What does this mean? When it uses graphics, Lotus will use the Presentation Manager; when it uses data structures, it will follow the DB2 model; when it uses languages, it will probably use SAA versions. Manuscript's support of DCA/DIA (IBM's text formats) will strengthen.

Note, however, that while the data can pass easily back and forth between them, a spreadsheet and a data base are both optimized for different types of data processing: A spreadsheet is optimized for calculations and is data-poor and structure-rich (much of the data is derived), while a data base is optimized for manipulation of data and is data-rich and structure-poor. A spreadsheet model could be represented as a data base, but that's an unnatural, clumsy way to do it -- as is the common practice of building small flat-file data bases in 1-2-3.

Lotus/DBMS

Somewhat overshadowed by news of the alliance with IBM was Lotus's own set of announcements, including not just the Lotus System, a vague overarching concept akin to Systems Application Architecture, but also LEAF, for Lotus Extended Applications Facility, a last-minute acronym used in different ways by different people from the company. The Lotus System is a broad umbrella that lets adherent products work together automatically, using OS/2-based connecting tissue and a common data structure that will see its clearest rendition in Lotus/DBMS. LEAF is a language and tools that help create links between products that weren't initially designed to work together, including some Lotus DOS products and third-party products.

Lotus has come to understand the notion of cooperating applications better than almost any software vendor around -- even though a number of its newest DOS-based applications (e.g. Metro and Manuscript) can't work together because of sheer size constraints. Lotus's extension of 1-2-3 into a pseudo-operating environment, its broadening of the Metro kernel into a terminate-and-stay-resident facility that underlies a number of Lotus applications such as Lotus Express and others to come, and the Lotus System and LEAF themselves all indicate a corporate sensitivity to these issues.

The trick now will be for Lotus to impose that vision on its individual applications developers. A couple of salutary moves: The return of 1-2-3 and Manuscript developer Jonathan Sachs into the corporate ranks, and the hiring of Irene Greif from MIT's Laboratory for Computer Science. Sachs will combine his spreadsheet and overall design expertise to work on 1-2-3/G and Lotus/DBMS. Greif's specialty is workgroup computing -- the applications end of networks. At MIT, she ran the RTCAL and MPCAL projects, multi-user calendar/project management systems, and directed development of the Lab's Collaborative Editing System. Her role at Lotus is still evolving, which means that she's roaming the company instilling a valuable new perspective in a variety of applications. Like data base, workgroup computing is a rich underpinning that applies to all application areas.
We first wrote about Reasoning Systems in late 1986. Without venture capital, without hoopla, the company has survived to announce release 2 of its product Refine ($32-50,000 on a Sun or Symbolics). From a product positioned as a full-scale automatic programming system that can transform specifications into executable LISP code, Reasoning has moved Refine in two directions: towards standard languages, and towards a full-scale software development and maintenance environment. Current Reasoning customers consider Refine mostly a prototyping tool, a rich way to think about problems, define specifications, and generate application models. Its LISP output and a need for substantial user training have limited its widespread adoption. Reasoning's goal now is to insinuate Refine into the commercial development environment without losing its power.

"Automatic programming," of course, is simply a way of describing the transformation of ideas represented in a very-high-level language (VHLL) into a low-level, ultimately machine-specific, language. The higher the level of the source language and the stronger its ability to resolve ambiguities, the more "automatic" and powerful the compiler/tool is. Yet the developer still has to specify exactly what he wants, either explicitly as he develops the specifications or implicitly in his selection of an automatic programming tool that does things a certain way or makes certain assumptions about preferences.

**Built to LISP**

With Refine, the user can express his specifications -- procedurally, logically or in an object-oriented way -- as a very-high-level program, modeling the system he desired with little concern for implementation details. Refine then converts that program into executable LISP. The general concept is that of using a representation of the meaning that can then be translated into any form desired, optimized for a particular machine and execution environment. In release 2, Refine will be able to use grammars for "foreign" languages such as COBOL or Fortran. The first of these, for the C language, is not yet fully implemented but will be demonstrated at the CASE '87 show late this month (see calendar, page 16).

The value lies not just in saving coding labor but also in freeing the user to think about the system abstractly and simply. It lets him design and redesign with regard only for results, not for implementation or details of the target environment.

The notion of maintaining the specifications, not the code, is powerful -- and hardly new. But in this day of humongous billion-dollar projects with specifications that fill bookshelves, it doesn't offer much unless the specifications themselves are easy to navigate, parse, analyze -- in a word, to maintain. Accordingly, Refine also builds a knowledge base about the specifications themselves -- describing them as an active text rather than implementing them as a program: Who designed what, where in the specifications such and such an item is described, and so forth. Using a query tool and a browser, a user can easily find and inspect whatever he chooses. In a future release Refine will keep a record of what happens as the specifications are updated and modified, providing a history of the development of the system, cross-references among versions, and so forth.

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With the new foreign-language capabilities, that same software-examination facility will also be applicable to system implementations, or portions, hand-written in lower-level languages. Refine can go through and parse the code, developing a substantial understanding of the application and its structure (although unfortunately not yet enough to reimplement the application entirely for another language or another target environment without human intervention). Thus Refine will also serve as a programming environment for people using traditional procedural languages.

NITTY-GRITTY EXPERTS

When Larry Geisel left Carnegie Group Inc. abruptly in February, most of the discussion centered around personality issues. Whatever those undercurrents, Geisel for some time has wanted to get back to the "real world," and we suspect CGI wasn't close enough. Geisel has now resurfaced as ceo and chief owner of Intelligent Technology Group, based (like CGI) in Pittsburgh. Intelligent Technology's primary operation at the moment is Intelligent Information Systems. Formerly the On-Line Services Division of Control Data, it is a profitable software and time-sharing business with 1986 revenues of $10 million, divested as part of CDC's corporate restructuring. Its software runs mostly on DEC and IBM equipment, and its major customers are banks and people such as government offices and law firms with heavy office automation/text management needs. Geisel's previous experience includes the founding and building of Summit Information Systems, a supplier of dp services to banks.

Obviously, the big opportunity here is to apply AI to such applications as financial modeling, pricing of financial instruments, and text management. Geisel has also started up a second operation -- eight people and growing -- under ITG to develop the tools and expertise to do so. Delivery vehicles will include PC ATs and 386 machines; the bulk of the software will be written in C. The team includes Paul Haley, formerly chief scientist at Inference.

Everyone loudly acknowledges the importance of applications expertise, yet AI applications vendors are frequently enticed into the business of selling their tools as well as the applications they use them to build. Consider Distribution Management Systems (Release 1.0, 8 August 1986), recently acquired by Cullinet, or the folks from Artificial Intelligence Technologies (Release 1.0, 21 April 1986), who built an expert newspaper management system for Composition Systems Inc. and then left to start a tools company while still consulting to CSI. Both started in the applications business, but couldn't resist the lure of selling their technology...

Geisel already has such a tools business in mind, reselling the tools that his technical folks are building to enhance Intelligent Information Systems' applications. Whether or not selling tools is a deceptively attractive business, we're satisfied that a company adding AI to real-world applications is likely to have a better understanding of its customers' needs than one adding real-world expertise to AI tools.

Release 1.0
12 May 1987
Apple liberates its software troops

For a while, it seemed that Apple was the only company that wanted to build software for its Macintosh. Now that Apple has made it a success, with a little help from its friends, those friends no longer want Apple in the market competing with them. (The situation is similar with IBM, but IBM can get away with the conflict more easily because it has a larger installed base; moreover, the IBM platform includes a host of clones and compatibles.)

Accordingly, Apple has announced plans to create and eventually spin off a new Apple-oriented software company. By letting go of it, Apple will in fact let it be freer to compete with all its strength. Without a formal Apple tie, the new venture won’t have to pull its punches as Apple did in competing with its independent software vendors. That’s how it should be; we suspect that both companies will complain internally about a lack of support from each other, while at the same time their competitors will still charge them with excessive closeness.

The new venture will be run by Apple’s former evp of U.S. sales and marketing Bill Campbell, who now gets a chance both to be loyal to Apple and to run his own show, a reward for a job well-done. Aside from the delicate severing of ties with Apple, Campbell’s major challenge will be to give the company a distinct product identity; his suggestion that it will be "business graphics" doesn't qualify. The initial company will be somewhat bland, consisting mostly of AppleWorks on the low end and some vanilla graphics and word-processing products for the Mac. Campbell hints that he’s about to hire a technical wizard, albeit one not yet recognized as such by the outside world. That is likely to be the most important choice he makes.

The Complete PC

From his start in the semiconductor business at Intersil and Intel, Gordie Campbell has been inching towards the systems business, through his spectacular rise and fall as founder of Seeq and his current success as founder and ceo of Chips & Technologies, which makes the insides of most of the industry’s U.S.-made clones. His latest venture, as instigator, investor and director, is the Complete PC, a vendor of handy add-ons. Mitz Kurobe, long known to the industry as the U.S. representative of Mitsui Comtek, is now general manager of international operations for The Complete PC. Its first product is the Complete Answering Machine (CAM, $350), a handy device that takes and delivers messages, forwards calls, and generally handles phone matters as well as a reliable person, and better than most. It takes only 90K of RAM, in the background, and a couple of megabytes of hard disk.

Let us know if you find any typos...

One of the nice things about CAM is its non-invasiveness; it doesn’t take over your pc. Extending that notion even further is PC Type Right from Microlytics (distributed by Xerox for $200), an add-on that never even gets close to your computer’s innards; it plugs in between your keyboard and your computer. PC Type Right has a 100,000-word dictionary in ROM that checks your spelling as you type. Because it stays outside your computing environment, it can work with anything that sends alphanumerical strings down a wire
(although it needs cable-specific versions), without conflicting with other programs or taking up memory. (Yes, you can turn it off, and add up to 1200 words to a 10-year-battery memory.) We were loath to try this thing: We like to think as we type and do quality control later. Yet we got quite fond of it after a day, and, as Microlytics president Mike Weiner predicted, our typing improved rapidly. Now we can type and QC at the same time!

Grapevine

Anyone who has ever tried to install a local-area network knows why they provide such a big market for service and support. (Don't ask about our experience!) Ken Scott, formerly senior vp of sales and marketing at Micro-rim and now ceo of Computer Pathways (founded by evp and chief technical officer Tom Borkowski), is bravely attempting to turn at least the low end of the market into one for products, not services.

Computer Pathways' product, Grapevine, is a distributed network system, optimized for light use and E-mail rather than heavy-duty multi-user applications. It sells for $595 per station, offers a fully memory-resident mail package (unlike much of the competition), and makes life simple for real folk trying to get work done. Grapevine isn't suitable if you're planning to bring in a server, but if it's really as trouble-free as it seems it may finally allow the rest of us to use networks -- and the rest of the dealers to sell them.

Protection from copyright protection litigation

Statistics indicate that ceos of utility companies tend to be lawyers, reflecting the skills needed to get ahead in that benighted business. The way things are going, we're afraid that may happen in the software business too... But sometimes common sense, not legal prowess, still prevails. We were delighted to hear recently that Ashton-Tate had promised not to sue WordTech over its dBASE clone in return for rights to WordTech's SQL technology and a free hand in hiring its creator, Harry Wong.

Serving the client

"I took the client out to lunch, see, to talk about a new positioning for the product. He's a hungry young tiger, you know, wants to make a mark in the company...

"And I pitched this idea. We'll do vignettes of the company's sales team, talking about the benefits they provide to the customers. It'll be slice-of-life stuff, drive the point right home to people who've been in sales situations like that. The customers? Well, they might not know what it's all about, but it will get the client brownie points with the sales organization, which feels neglected right now. And it'll get him lots of visibility with top management. We're placing it on the networks and in all the right books -- the Journal, the Times, BusinessWeek, Forbes, Ad Age.

"Who did that? they'll ask. And his name will get around. It's guaranteed to be a success, super-compelling; all the guys I talk to are wild about it.

"Will it actually sell the computers? I don't know...but it'll look good on his resume."

Release 1.0  12 May 1987
PHONE NUMBERS

Bill Campbell, Al Eisenstat, Apple (pro tem), (408) 996-1010
Gordon Campbell, Chips & Technologies, (408) 434-0600
Mitz Kurobe, The Complete PC, (408) 434-0145
Ken Scott, Computer Pathways, (206) 487-1000
Larry Geisel, Intelligent Technology Group, (412) 931-7600
Ed Belove, Lotus, (617) 577-8500
Mike Weiner, Microlytics, (716) 248-9150
Ed Harris, Persoft, (608) 273-6000
John Anton, Reasoning Systems, (415) 494-6201
Milos Konopasek, United Technical Services, (815) 963-2220

COMING SOON...

- Natural-language processing.
- Section 508: Enabling the disabled.
- Multi-user project management.
- Text: Structure and search.
- Nitty-gritty experts.
- The Forum transcripts.
- And much more...

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<tr>
<td>May 17-20</td>
<td>IIA midyear conference - Washington, DC. Sponsored by the Information Industry Association, on &quot;shaping corporate America.&quot; Also including Intec, co-sponsored by Associated Information Managers, with Senator Frank Lautenberg and journalist Sy Hersh. Call Gini Nelson at (202) 639-8262.</td>
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<tr>
<td>May 18</td>
<td>Massachusetts Software Council dinner meeting - Burlington, MA. With John Landry on expert systems, heckled by Howard Cannon, Fred Luconi and Jerry Barber. Contact: Joyce Plotkin, (617) 497-5716.</td>
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<tr>
<td>May 18-21</td>
<td>Navy Microcomputer Conference - Virginia Beach, VA. Sponsored by the Navy Regional Data Automation Center. Contact: Karla Rowlett at (804) 444-8486.</td>
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<tr>
<td>May 21</td>
<td>SEI analysts' meeting - New York City. With chairman Al West. Contact: Murray Louis, (215) 687-1700.</td>
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<td>May 21-22</td>
<td>TECHNOLOGICAL SUPPORT FOR WORKGROUP COMPUTING - New York City. Sponsored by NYU. Call Marge Olson, (212) 285-6077.</td>
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<td>May 27-29</td>
<td>CASE 87 - Cambridge, MA. &quot;International workshop on computer-aided software engineering.&quot; Sponsored by Index Technology, Purdue and Northeastern Universities, Boston ACM; real-world but nonpartisan. Call Elliot Chikofsky, (617) 491-2100.</td>
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<tr>
<td>June 1-3</td>
<td>SPRING COMDEX - Atlanta. Incorporating winter Comdex, by popular request. Contact: Linda Yogel, (617) 449-6600.</td>
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<td>June 1-3</td>
<td>AICPA Microcomputer Conference and Exhbition - Dallas. Meet the CPAs who are your customers, and those who support your customers. Sponsored by American Institute of Certified Public Accountants. Contact: Phil Neagle, (212) 575-6200.</td>
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<tr>
<td>June 2-3</td>
<td>Distributed processing: Leveraging architectures, applications and the organization - New York and San Francisco. By the Yankee Group. Contact: Bill Smulsky, (617) 367-1000.</td>
</tr>
<tr>
<td>June 3</td>
<td>Bill Gates at the PC Users Group - Boston. ...with news to reveal, we hear. Sponsored by a unit of the Boston Computer Society. Contact: Jonathan Rotenberg, (617) 367-8080.</td>
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<tr>
<td>June 4</td>
<td>Business services conference - New York City. Meet the people behind Gartner Group, IMS International, and other information/dp providers. Sponsored by Robertson Colman for financial types. Call your rep or Toni Cooper at (415) 781-9700.</td>
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<tr>
<td>June 14-15</td>
<td><strong>Communications and information systems</strong> - San Francisco. Meet the people behind many computer &amp; communications companies. Sponsored by Alex. Brown and targeted to financial analysts. Contact your rep or Stephanie Morrison at (301) 727-1700.</td>
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<tr>
<td>June 15-18</td>
<td><strong>National Computer Conference</strong> - Chicago. Sponsored by AFIPS and a host of other societies. Call Martha Byrne at (800) NCC-1987 or (703) 620-8925.</td>
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<tr>
<td>June 22-24</td>
<td><strong>Computer-aided software engineering symposium</strong> - Washington, D.C. Overviews by CASE stars Al Case (yes!), Peter Chen, Ken Orr and Ed Yourdon, with two days of vendor presentations. Conducted by Digital Consulting. Contact: Daniel Horgan, (617) 470-3870.</td>
</tr>
<tr>
<td>June 23</td>
<td><strong>ADAPSO computer software &amp; services industry financial forum</strong> - New York City. The fourteenth annual, and still worth it. Contact Sheila Wakefield at ADAPSO, (703) 522-5055.</td>
</tr>
<tr>
<td>June 29-30</td>
<td><strong>Microcomputer Managers Association meeting &amp; show</strong> - New York City. By and for micro managers; meet your customers. Contact: Annie Zdinak, (800) 237-0316 or (201) 569-6916.</td>
</tr>
<tr>
<td>July 13-17</td>
<td><strong>AAAI-87</strong> - Seattle, WA. So good, they made it earlier this year. Contact: Claudia Mazzetti at the American Association for Artificial Intelligence, (415) 328-3123.</td>
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<th>Date Range</th>
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<tr>
<td>September 1-3</td>
<td>PC Expo - New York City. Topics, exhibits for micro managers. Sponsored by PC Expo. Call Steve Gross, (800) 922-0324 or (201) 569-8542.</td>
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<tr>
<td>September 21-23</td>
<td>Conference on software maintenance - Austin, TX. Sponsored by several professional societies. Contact: Roger Martin, National Bureau of Standards, (301) 921-3545.</td>
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<tr>
<td>September 27-30</td>
<td>ADAPSO management conference - Colorado Springs, CO. Contact: Sheila Wakefield, (703) 522-5055.</td>
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<tr>
<td>October 4-7</td>
<td>Computer Services Forum - Baltimore. The standard in Wall Street software events. Call Chris Mortensen, (301) 727-1700.</td>
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<tr>
<td>October 4-8</td>
<td>OOPSLA '87 - Orlando, FL. The second annual conference on object-oriented programming, sponsored by ACM and chaired by Adele Goldberg (ParcPlace) and Chet Wisinski (PPI). Contact: Jerry Archibald, (914) 789-7695.</td>
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October 20-22  Networld - Dallas. Sponsored by Novell. Contact: Annie Zdinak, (800) 237-0316 or (201) 569-6916.


October 27-29  UNIX expo - New York City. Managed by National Expositions. Contact: Dot Fitzsimmons, (212) 868-2727, or (212) 391-9111.


November 2-6  COMDEX FALL - Las Vegas. Needs no introduction... Contact: Jane Wemyss, Interface Group. (617) 449-0600.

December 1-3  Optical Information Systems - New York City. Seminars and exhibits, focusing on CD ROM, sponsored by Meckler Publishing. Contact: Marilyn Reed, (203) 226-6967.

1988 (PLAN AHEAD!)

February 21-24  PERSONAL COMPUTER FORUM - Naples, FL. We moved it in search of variety and better weather. Registration forms will be mailed to subscribers next fall. For further information, please call Sylvia Franklin, (212) 758-3434.

March 16-23  Hannover Fair CeBIT - Hanover, West Germany. Contact: Donna Peterson Hyland, Hannover Fairs USA, (609) 987-1202.


Please let us know of any other events we should include. --Mia Dyson

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Sylvia Franklin
Associate Publisher

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